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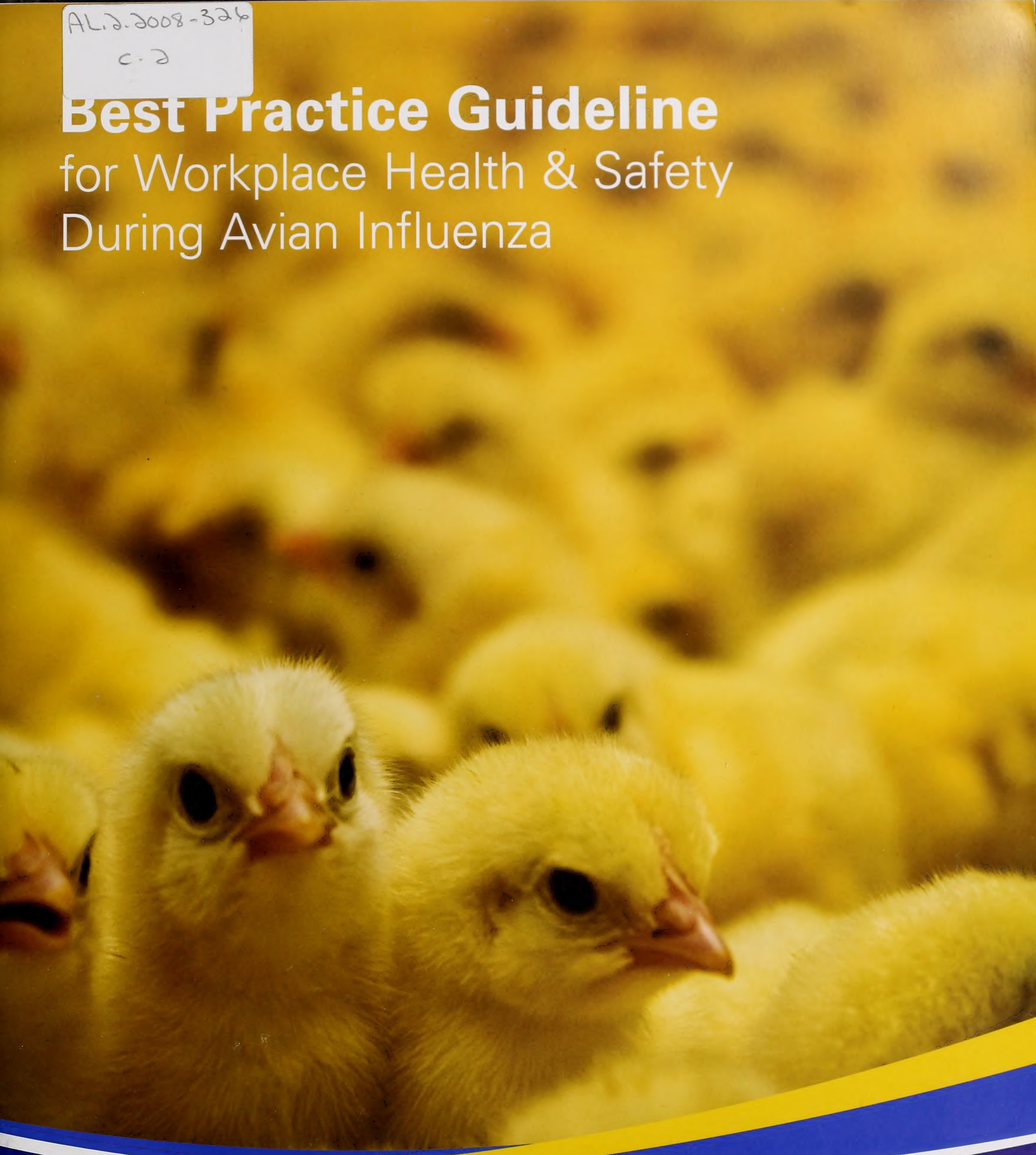
Best Practice Guideline

for Workplace Health & Safety During Avian Influenza



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- Alberta Employment and Immigration
- Alberta Agriculture and Rural Development
- Alberta Health and Wellness

This best practice guideline is intended to be consistent with the direction of documents on avian influenza from Alberta Health and Wellness, US Center for Disease Control and the World Health Organization.

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Section 1: Overview

During an avian influenza outbreak some workers may be at risk of coming in contact with the virus at their workplaces. How can you protect workplace health and safety during an avian influenza outbreak? Read on.

The information included in this document is—to the best of our knowledge—current at the time of printing. The document is intended to serve as a guideline to all workplaces affected by avian influenza and provides information on legislated requirements, best practices, guidelines and strategies in workplace health and safety in the event of an avian influenza outbreak. While legislated requirements—the laws—are specifically identified; the rest provides general information rather than a definitive guide to specific practices or procedures. This document provides guidelines, only you can (and must) identify the specific hazards and controls required for your workplace.

This document provides you with an overview of **best practices** in workplace health and safety for the protection of your workers against the avian influenza virus during an outbreak.

For the purpose of this document, a best practice is a program, process, strategy, or activity that:

- Has been shown to be effective in the prevention of workplace illness or injury.
- Has been implemented, maintained, and evaluated.
- Is based on current information.
- Is of value to, or transferable to, other organizations.

In Alberta, the requirements for health and safety are outlined in the *Occupational Health and Safety Act (OHS Act)*, Regulation (OHS Regulation), and Code (OHS Code). The *Act*, Regulation, and Code are available for viewing or downloading on the Alberta Employment and Immigration (AEI), Workplace Health and Safety (WHS) website at **http://employment.alberta.ca/whs-ohs**. This document does not replace the *OHS Act*, Regulation, and Code and does not exempt you from your responsibilities under the legislation.

Official printed copies may be purchased from the Queen's Printer at **www.qp.gov.ab.ca/custom_page.cfm?page_id+41** or:

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RESOURCES

Section 2: What is Avian Influenza?

What is avian influenza?
Avian influenza, or "bird flu", is a contagious disease caused by viruses that normally infect only wild and/or domestic birds.

DID YOU KNOW?[1]

The terms low and high pathogenic are used to determine the effect of the virus on the health of the bird population.

Low pathogenic avian influenza (LPAI): Low pathogenic avian influenza is commonly present in wild waterfowl such as ducks. Most avian influenza A viruses are low pathogenic avian influenza viruses that are associated with mild disease/symptoms in poultry and may easily go undetected in birds.

High pathogenic avian influenza (HPAI): The high pathogenic avian influenza virus is of higher risk to birds as it spreads very rapidly through poultry flocks, causing a large die off in the infected birds.

How can avian influenza affect workers?
During an avian influenza outbreak, there is the potential that the avian influenza virus could be spread from infected poultry/birds to exposed workers who are not properly protected from the hazard.

Some strains of the avian influenza virus may infect a small number of workers who come in direct contact with sick birds (e.g. workers involved in clean-up/culling of birds) or environments contaminated with the virus. It is very rare that human-to-human spread of avian influenza will occur among workers.[2]

Humans infected with avian influenza (e.g. through contaminated environments or machinery) may develop symptoms within one to five days of exposure to the virus. People will commonly display symptoms that resemble those of the conventional (seasonal) influenza. These include: coughing, a fever, sore throat, and muscle aches. A relatively mild eye infection (conjunctivitis) is sometimes the only indication of the disease. More severe symptoms of avian influenza include: viral pneumonia and acute respiratory distress.[3]

1 http://www.cdc.gov/flu/avian/gen-info/pdf/flu_viruses.pdf
2 http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/agdex8136
3 http://www.mayoclinic.com/health/bird-flu/DS00566/DSECTION=2

How is avian influenza transmitted to workers?

Avian influenza infection in workers can potentially occur from contact with:

- Infected poultry and under or uncooked poultry products.
- Infected wild or domestic birds, manure and litter containing high concentrations of the avian influenza virus.
- Contaminated surfaces, vehicles, equipment, clothing and footwear at infected sites (e.g. infected poultry farms).[4]

How is avian influenza different from seasonal or pandemic influenza?

Avian (Bird) Influenza	Pandemic Influenza	Seasonal (Human) Influenza
• A disease of birds/animals caused by influenza viruses carried and spread between birds. • Wild birds, specifically waterfowl, are the main carriers. • Domestic poultry can get the virus from wild birds and may become seriously ill. • Humans may (but rarely) be infected with the virus when in close contact with infected birds/animals, their waste/ environment, or uncooked or undercooked infected poultry products.	• A new strain of influenza virus that spreads quickly among humans worldwide because humans have no pre-existing immunity against it. • Potential to cause large number(s) of human illness and death. • A specific vaccine can not be developed until the new strain has emerged.	• A disease caused by influenza viruses carried and spread between humans. • Individuals are infected by these different strains of influenza at multiple times during their lives. Even though the virus may change slightly from year to year, most people will continue to have some protection against slightly changed viruses, particularly if they are immunized yearly.

Can avian influenza become pandemic influenza?

The avian influenza virus does not spread easily or rapidly among humans. However, influenza viruses have the possibility to mingle with one another and develop into a new strain. If someone with human influenza also becomes infected with avian influenza, there is a chance that the viruses could mingle and turn into a new virus that spreads easily from person to person. This could lead to a pandemic influenza. No one would have immunity to the new virus.[5]

FOCUS

If avian influenza were to escalate to a pandemic influenza, please refer to the resource: *Best Practice Guideline for Workplace Health and Safety During Pandemic Influenza*

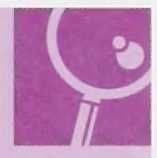
4 http://www.phac-aspc.gc.ca/publicat/daio-enia/2_e.html#23
5 http://www.hc-sc.gc.ca/hl-vs/iyh-vsv/diseases-maladies/avian-aviare-eng.php

Section 3: Work Environment during an Avian Influenza Outbreak

How does avian influenza relate to you and your workplace?
Avian influenza introduces a potential biological hazard into some workplaces (e.g. poultry farming operations, zoos, egg production facilities). Your overall workplace hazard assessment must consider the risks that the avian influenza virus may introduce into your work environment, especially when job tasks require that workers participate in a workplace affected by the avian influenza virus.

How can your workplace prepare for and respond to an avian influenza outbreak?
This document addresses workplace health and safety best practices, options and strategies for preparation and response to preserve health and safety in all Alberta workplaces that could potentially be affected by an avian influenza outbreak.

The hazard assessment tool focuses on potential and actual health and safety issues during an avian influenza outbreak and provides methods for controlling or reducing the risk of exposure to the virus in your workplace.



FOCUS

Examples of workplaces that may be affected by the avian influenza virus during an outbreak may include:

- Poultry farms (backyard and industry)
- Poultry processing facilities
- Laboratories
- Zoos
- Hospitals and Veterinarian Clinics

DID YOU KNOW?

In February of 2004, the Canadian Food Inspection Agency announced an outbreak of high pathogenic avian influenza in poultry in British Columbia. Culling operations and other measures were performed in an effort to control the spread of the virus. Health Canada reported two cases of laboratory-confirmed influenza A (H7): one in a person involved in culling operations, and the other in a poultry worker who had close contact with poultry. Both patients developed conjunctivitis (eye infection) and other flu-like symptoms. Although these are the only laboratory-confirmed cases of avian influenza A (H7) in humans during this outbreak, approximately 10 other poultry workers exhibited conjunctival and/or upper respiratory symptoms after having contact with poultry.[6]

6 http://www.cdc.gov/flu/avian/outbreaks/past.htm

Section 4: Roles and Responsibilities - Workplace Health & Safety

The Alberta *Occupational Health and Safety Act*, Regulation, and Code combine to set out the legal requirements that you and your workers must meet to protect the health and safety of yourselves and others. These are **minimum** requirements.

General Responsibilities

Employers must ensure, as far as reasonably practical, the health and safety of all workers at their work site.

Workers must take reasonable care and co-operate with the employer to ensure the health and safety of themselves and others.

OHS Act, Section 2

LEGISLATED REQUIREMENTS

Other Responsibilities – Biological Hazards

Under Part 35 of the OHS Code, employers must:

- Establish policies and procedures dealing with storing, handling, using and disposing of biohazardous materials.
- Ensure that workers are informed of the health hazards associated with exposure to the biohazardous material.
- Ensure that worker exposure to biohazardous materials is kept as low as reasonably practicable.
- Establish policies and procedures for post-exposure management of workers exposed to biohazardous material.

OHS Code, Part 35

LEGISLATED REQUIREMENTS

Who is covered under the Alberta *Occupational Health and Safety Act*, Regulation and Code?

Every occupation, employment, business, calling or pursuit over which the Legistature has jurisdiction, except:

1) Farming or ranching specified in the regulations, and
2) working to or around a private dwelling or any land used in connection with the dwelling that is performed by an occupant or owner who lives in the private dwelling or a household servant of the occupant or owner.

OHS Act, Section 1

LEGISLATED REQUIREMENTS

It is recognized that some workers who will be working in environments potentially infected with the avian influenza virus will not be covered under the Alberta *Occupational Health and Safety Act*, Regulation and Code. Health and safety for federal workers, for example those working for the Canadian Food Inspection Agency, are covered under the *Canada Labour Code*. For those not covered under the Alberta *OHS Act*, Regulation and Code, this document can be used as best practice recommendations. For those covered under the *OHS Act*, Regulation and Code, Alberta legislation is the **minimum** requirement for worker health and safety. The best practices outlined in this document will help to provide protection for workers and to prevent further spread of the avian influenza virus. The rest of the document provides general information rather than a definitive guide to specific practices or procedures.

If you are unsure of whether you are covered under the Alberta *Occupational Health and Safety Act*, Regulation and Code, please contact the Workplace Health and Safety Contact Centre at:

866-415-8690 (Toll-free within Alberta)
780-415-8690 (Edmonton and surrounding area)

Deaf/hard of hearing with TDD/TTY:
780-427-9999 in Edmonton
1-800-232-7215 throughout Alberta

Section 5: Hazard Assessment and Control

Hazard assessment and control is at the foundation of occupational health and safety and is a requirement under the Alberta Occupational Health and Safety Code.

What is a hazard?
A hazard is any situation, condition, or thing that may be dangerous to the safety or health of workers.

OHS Code, Part 1

LEGISLATED REQUIREMENTS

Hazards may be grouped into four categories: biological, physical, chemical, and psychological hazards. Examples of each are listed in the table below.

Biological Hazards	• Viruses • Fungi • Bacteria • Moulds • Blood and body fluids • Sewage
Physical Hazards	• Lifting and handling loads • Repetitive motions • Noise, vibration, or radiation
Chemical Hazards	• Chemicals (e.g. battery acids, solvents, cleaners) • Dusts (e.g. released from grinding, asbestos removal, sandblasting) • Fumes (e.g. welding) • Mists and vapours • Gases
Psychological Hazards	• Working conditions • Stress • Fatigue

What category of hazard is the avian influenza virus?

The avian influenza virus is a workplace biological hazard. For avian influenza, it is important to consider how the virus is transmitted when doing the hazard assessment.

Transmission of the avian influenza virus to humans can be represented as links in a chain.

- Source of the avian influenza virus
  - Direct contact with infected species (birds or humans)
  - Contact with contaminated environments/equipment
- Transmission of the avian influenza virus (between the source and the worker)
- A worker (host) who is exposed to the virus through job tasks

The avian influenza virus is thought to be primarily transmitted through droplets that come into direct contact with the nose, mouth, or eyes of a worker. Avian influenza can be indirectly transmitted to a worker through contact with an infected source in their environment such as machinery or equipment contaminated with the avian influenza virus (e.g. a worker touches a contaminated object and then touches his/her eyes, mouth or nose). The virus can also be transmitted by inhaling dust particulate infected with the virus.

Though rare with appropriate controls, human to human transmission of the avian influenza virus may occur through direct contact with an infected individual.

Identifying hazards related to the potential of an avian influenza outbreak should be part of your overall hazard assessment, done on an ongoing basis and involving everyone at the work site. In the event of an avian influenza outbreak in Alberta (determined and announced by the Canadian Food Inspection Agency), the hazard assessment should be reviewed to ensure that any new hazards or operational changes are addressed.

Transmission of the avian influenza virus from animals to humans

Human infection caused by the avian influenza virus is rare. Direct contact with infected poultry, or surfaces and objects contaminated by their feces, is presently considered the main route of human infection. Exposure is considered most likely during culling, defeathering, butchering, and preparation of poultry.[7] The avian influenza virus can be transmitted from animals to humans in two ways:

- Directly from infected birds or from avian influenza virus contaminated environments
- Through close contact with an intermediate host (e.g. infected pig).[8]

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[7] [illegible]

[8] [illegible]

Responsibilities

LEGISLATED REQUIREMENTS

Employers

Under Part 2 of the OHS Code, employers must perform a hazard assessment that includes:

- Assessing a work site and identify existing or potential hazards.
- Preparing a written and dated hazard assessment, including the methods used to control or eliminate the hazards identified. A properly completed checklist is acceptable as a written hazard assessment.
- Where possible, involve workers in the hazard assessment.
- Ensuring workers are informed of the hazards and the methods used to control the hazards.

OHS Code, Part 2

When to Repeat the Hazard Assessment

An employer must make sure that a hazard assessment is done:

- At reasonably practicable intervals to prevent the development of unsafe and unhealthy working conditions.
- When a new work process is introduced.
- When a work process or operation changes.
- Before the construction of a new work site.

OHS Code, Part 2

Why assess?

Assessing hazards means taking a careful look at what could harm workers at the workplace. The purpose of including avian influenza in the hazard assessment is to address the potential biological exposure risk and control the risk as appropriate.

How to assess avian influenza in your environment

In preparation for the possibility of an avian influenza outbreak, include avian influenza as a potential biological hazard in the workplace hazard assessment.

DID YOU KNOW?

Currently there are no cases of avian influenza in Alberta. The last known case of high pathogenic avian influenza in Canada was in September 2007 in Saskatchewan.

DID YOU KNOW?

Under the *Health of Animals Act*, all H5/H7 strains of avian influenza are reportable to the Canadian Food Inspection Agency, whether or not they are highly pathogenic. Control or eradication of outbreaks of H5/H7 avian influenza is the mandate of the Canadian Food Inspection Agency. In an outbreak, the Canadian Food Inspection Agency policy dictates the establishment of a "control zone" around the infected farm to limit the spread of infection.

Step 1: List types of work and work-related activities

The first step in a hazard assessment for avian influenza is to provide a general description of the work and list the specific job tasks. This includes identification of actual or potential exposure of workers to the avian influenza virus in the workplace, and specifically, the risk of exposure to avian influenza in the job tasks.

When assessing the risk of exposure to avian influenza in the job tasks, consider that working in proximity to birds or humans who are symptomatic of avian influenza will increase the risk of exposure to the avian influenza virus.

Questions to ask

- What job tasks increase potential worker exposure to the avian influenza virus in the workplace?
- Who is potentially exposed to the avian influenza virus as part of their work?
- Do workers who are potentially at risk of exposure to avian influenza know the signs indicating that birds are infected with the avian influenza virus?
- How often are workers exposed to the hazard?
- Do work processes increase exposure to the hazard, for example, depopulation of infected birds?
- When is the greatest risk of exposure?
- Do the job tasks require contact with symptomatic avian influenza patients/persons in a small poorly ventilated workspace?

FOCUS

Use the general guidelines in the chart that follows to estimate the avian influenza exposure risk—minimal, lower, and higher exposure job tasks—for individuals in your workplace. A summary of controls linked to minimal, lower and higher exposure job tasks will follow.

General guidelines for assessing avian influenza exposure risk in the workplace[10]

1. Workplace exposure: Level of exposure to infected birds and environments.	**2. Job task:** Decide on the job tasks and the workers potential ability to limit exposure to avian influenza infected birds. For information on the Canadian Food Inspection Agency Control Zones refer to Appendix 1.
Minimal exposure tasks	
Workers with no known contact to avian influenza infected poultry/birds or environments.	Jobs that involve handling of apparently healthy birds (unknown avian influenza status), carcasses resulting from normal mortality, feces, feathers, and bedding that are either: a) At locations within the Canadian Food Inspection Agency "Control Area", but beyond the Canadian Food Inspection Agency "Restricted Zones". b) At locations within the Canadian Food Inspection Agency "Infected Zone" or "Restricted Zone" and that have been tested and declared negative for high pathogenic avian influenza.
Lower exposure tasks	
Workers who are at risk of exposure to avian influenza infected poultry/birds or environment.	Jobs that involve handling live or dead birds, their feces, feathers, or bedding, or the cleaning and disinfection of contaminated surfaces or equipment in workplaces that: a) Are within the Canadian Food Inspection Agency "Restricted Zone" and where the high pathogenic avian influenza infection status of the birds is unknown. b) Have work activities associated with birds of unknown high pathogenic avian influenza infection status that have clinical illness indicative of high pathogenic avian influenza or are strongly suspected of having an epidemiological or ecological link with birds known to be infected with high pathogenic avian influenza.
High exposure tasks	
Workers exposed to avian influenza infected poultry/ birds, environments or persons.	Jobs that involve handling live or dead birds, their feces, feathers, or bedding, or the cleaning and disinfection of contaminated surfaces or equipment in workplaces: a) Where high pathogenic avian influenza infected birds have been found (and the premises have not yet been declared cleaned and disinfected by the Canadian Food Inspection Agency). b) That are of unknown high pathogenic avian influenza infection status but that are considered by the Canadian Food Inspection Agency to be high risk direct contacts of known positives. c) That are of unknown high pathogenic avian influenza infection status and that lie within the Canadian Food Inspection Agency "Infected Zone".
	Healthcare workers in close contact of a strongly suspected or confirmed human avian influenza case or in direct contact with respiratory secretions or other potentially infectious specimens from the case.[11]

10 PLEASE NOTE: This table is for use as a tool in generally estimating risk of exposure to the avian influenza virus in the workplace.
11 http://www.phac-aspc.gc.ca/publicat/daio-enia/7_e.html#7

Source: http://www.health.gov.on.ca/english/public/program/emu/avian/avian_ppe_guide.pdf

Step 2: Identify the hazard

Determine the hazards associated with workplace exposures and job tasks. In addition to job tasks that increase the risk of exposure, consider the sources of avian influenza or how the virus can be spread from the source of the virus to the worker as well as potential routes of transmission.

Questions to ask

- What sources exist for potential exposure to the avian influenza virus?
- What are the potential routes of transmission based on exposures in the workplace?
- What are the routes of entry for the worker based on the exposures in the workplace?

How can avian influenza be spread to workers?

Avian influenza is spread primarily by direct contact (eyes, nose and mouth) with infected feces and body fluids from infected birds.

What are potential routes of transmission of avian influenza in the workplace?

- *Contact transmission* – Direct contact with body fluids and feces from infected birds or infected humans. Eyes are a particularly easy route of entry for the virus. Contaminated materials, such as bedding, and equipment can become a source of contact that could lead to infection.
- *Airborne transmission* – The avian influenza virus can be transmitted to humans through inhalation of dust or droplets containing contaminated material, body fluids or feces.

During an avian influenza outbreak, what surfaces are most likely to be contaminated in your workplace?

The virus can live:	At your workplace be aware the virus may be on:
• On hard surfaces for one to two days. • In water for many days. • In feces, it can survive for 30 to 35 days at 4°C and for six days at 37°C.	• On vehicles, equipment, bird bedding and clothing. • In water and feed. • On feces and feathers. • In uncooked poultry. • In dust particles.

Step 3: Assess the hazards

Once an avian influenza outbreak is identified, announced and clean up activities have been initiated by the Canadian Food Inspection Agency, a regular review of the hazards that the virus poses in the workplace should be done.

Review and identify the potential of exposure for workers

- Review tasks and jobs. Determine which workers are exposed in the workplace and when they may be exposed to the hazard.
- During an avian influenza outbreak, having identified areas where workers will be exposed, review the hazard assessment, evaluate the effectiveness of controls, identify new hazards, and introduce new controls as needed.

Other potential hazards in the workplace related to avian influenza

During avian influenza, other potential hazards should be considered including:

- Stress – which may be related to fear, illness of family members, and changing job roles and tasks.
- Fatigue – if workers are required to put in extra hours.
- Working conditions – related to increased or different workloads (e.g. heat stress, exposure to other chemical hazards such as disinfectants).

RESOURCES

eLearning program: Shift Work and Fatigue
http://employment.alberta.ca/whs/learning/Shiftwork/index.html

Information on when avian influenza is identified can be confirmed by the Canadian Food Inspection Agency:
www.inspection.gc.ca/english/anima/heasan/disemala/avflu/situatione.shtml

FOCUS

Examples of workers at potential risk of exposure to avian influenza during job tasks[9]:

- Poultry farmers and their employees involved in culling activities (e.g. depopulating poultry)
- Animal handlers (other than poultry employees)
- Laboratory employees
- Healthcare workers treating patients with known or suspected avian influenza
- Chick movers at egg production facilities
- Veterinarians and veterinarian staff
- Food handlers (includes workers in food processing facilities)
- Disease control and eradication workers on poultry farms
- Abattoir workers

9 http://www.osha.gov/OshDoc/data_AvianFlu/avian_flu_factsheet.pdf

Step 4: Implement controls

Eliminating and Controlling Hazards

Whenever possible, hazards should be eliminated. If elimination is not possible, they must be controlled. Control means reducing the hazard to levels that do not present a risk to a worker's health. Controls must be based on identifying and assessing existing or potential hazards. To implement effective controls for the avian influenza virus, consider how the virus is spread. Controls—in order of preference—include engineering, administrative, and personal protective equipment (PPE).

FIRST CHOICE	**Engineering controls**	• Preventing the exposure of domestic birds to wild birds. • Preventing the contamination of feed and water supplies by wild birds. • Ensuring birds do not have contact with surface water which may be contaminated with the avian influenza virus.
SECOND CHOICE	**Administrative controls**	• Manage policies and procedures. • Administer safe work procedures. • Enforce hand washing and good hygiene practices. • Limiting access to poultry barns. • Train and supervise workers.
LAST CHOICE	**Personal Protective Equipment (PPE)**	• Provide gloves, masks, gowns, eye protection, protective clothing, respirators, and others as appropriate. • Ensure that: - The right type of PPE is selected for the job and hazard - PPE fits properly and is comfortable under working conditions. - Workers are trained in the need for PPE, its use and maintenance - PPE is stored clean and fully operational
	Combination of above	• Engineering • Administrative • PPE

Adapted from Saskatchewan Labour – Avian Influenza: Protecting Poultry Workers

Study the sample completed Hazard Assessment and Control Sheet (Sample) at the end of this section. Blank sample hazard assessment forms are included in Appendix 2. Many other forms and tools can be used. You may use the samples included, another form, or develop your own. Ensure that your hazard assessment addresses all hazards specific to your work site.

Standard checklists or assistance in developing a checklist that meets your needs can be found at:
http://employment.alberta.ca/whs/learning/hazard/Hazard.htm

Hazards assessment and identification of controls is dynamic and must be based on the most current information available.

RESOURCES

Controls for the avian influenza virus
Controls must be based on the hazard assessment and may include engineering controls, administrative controls, and/or personal protective equipment.

Engineering
Engineering controls are workplace design features that isolate potential sources of infection from the worker. These measures can include:

- Preventing exposure of domestic birds to wild birds through proper biosecurity.
- Preventing the contamination of feed and water supplies by wild birds.
- Isolating or avoiding the introduction of new birds into existing poultry flocks.
- Ventilation (e.g. ensuring poultry areas have sufficient ventilation, use local ventilation in areas where there are feathers, bedding, etc.).
- Ensuring birds do not have contact with surface water which may be contaminated with the avian influenza virus.[12]

Administrative
Administrative controls are work practices that can reduce workplace exposures during an avian influenza outbreak. Administrative controls can include: training, hand and face hygiene, respiratory etiquette, limiting access to poultry houses, and prophylactic antiviral medication (i.e. Tamiflu). Please note that it is important to maintain administrative controls for all influenza (i.e. seasonal) viruses.

Hand cleaning facilities

- An employer must ensure that at least one wash basin or hand cleaning facility is provided in a toilet facility.
- An employer must ensure that there is one wash basin or hand cleaning facility for every two toilets in addition to the wash basin or hand cleaning facility required if three or more toilets are required in a toilet facility.
- An employer may substitute circular wash fountains for wash basins or hand cleaning facilities required on the basis that each 500 millimetres of the fountain's circumference is equivalent to one wash basin or hand cleaning facility.

OHS Code, Part 24, Section 359

LEGISLATED REQUIREMENTS

12 http://www.labour.gov.sk.ca/avianinfluenza/

Best Practices – Administrative controls for avian influenza

Hand Hygiene and Respiratory Etiquette

Hand hygiene is an important control measure in preventing the spread of avian influenza. Respiratory etiquette also plays an important role in limiting exposure to all influenza viruses, including the avian influenza virus.

- Provide resources and a work environment that promotes use of respiratory etiquette and hand hygiene. For example, no-touch waste containers, hand soap and hand sanitizers.
- Provide workers with up-to-date training on avian influenza risk factors and proper behaviours including respiratory etiquette and hand hygiene. This should include providing staff with information on where supplies are kept.
- Promote use of respiratory etiquette and hand hygiene with all individuals entering the workplace.
- Since the virus can live on the hands for five minutes, consistent, thorough hand hygiene is important in preventing the spread of infection.
- Hand hygiene decreases the number of disease causing organisms on the skin surface and can be achieved by either washing with soap and water, or by rubbing a waterless antiseptic product on the hands if hands are not visibly soiled.
- Waterless antiseptic hand products must be at least 60% alcohol (CDC 2002 Guideline for Hand Hygiene in Health Care Settings) and may be used when hands are not visibly soiled.

Removing Personal Protective Equipment

Workers should always remove protective clothing (except gloves) before removing their respirator and goggles. Hands should be washed as soon as the gloves are removed and again after eye protection and respirators are removed. Disposable personal protective equipment must be properly discarded (sealed plastic bags) and reusable or non-disposable personal protective equipment should be cleaned and disinfected properly.[1]

Restrict workplace attendance for workers with avian influenza symptoms

- Educate workers on the signs and symptoms of avian influenza.
- Workers are to report any symptoms of avian influenza to their supervisors and should not come to work when they are exhibiting any influenza symptoms. Individuals experiencing symptoms of avian influenza should see a doctor within 48 hours of the onset of symptoms. (Workers who are ill should stay at home until symptoms resolve.)
- Set up a process for ensuring that ill employees have completed any required isolation period and are healthy before allowing them to return to work.
- Return to work will be based on fitness-to-work policy established as part of the avian influenza emergency response plan.

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[1] [illegible]

Prophylaxis

During an avian influenza outbreak, prophylactic antiviral medication (i.e. Tamiflu) will be used to aid in prevention of infection for some individuals exposed to high levels of the avian influenza virus as part of their job tasks (e.g. cullers exposed to high concentration of the virus in mass culling). Recommendation and antiviral supply for prophylaxis and treatment will be guided by the exposure risk outlined in Table 1 and coordinated as outlined in Alberta Health and Wellness Human Health Issues Related to Avian Influenza.

Table 1: Summary of recommendations for antiviral use for avian influenza virus exposures (actual or potential)[14]

	Exposure risk		
	Low Risk Groups	**Moderate Risk Groups**	**High Risk Groups**
Subtype has previously been identified and is not known to have caused human illness	No antiviral prophylaxis	No antiviral prophylaxis	Consider antiviral prophylaxis for cullers due to high concentration of virus in mass cull.
Subtype is known to cause predominantly mild human illness	No antiviral prophylaxis	Consider antiviral prophylaxis	Antiviral prophylaxis
Subtype is known to cause predominantly severe human illness	No antiviral prophylaxis (Ongoing risk assessment to ensure cullers for non-infected birds)	Antiviral prophylaxis	Antiviral prophylaxis

14 Alberta Health and Wellness. Human Health Issues Related to Avian Influenza in Alberta. February 2008.

How to prevent avian influenza from being brought onto your premises during an avian influenza outbreak[15]

Vehicles, equipment and clothing can carry the avian influenza virus. As a general practice, bird owners should strictly limit access to their premises. If visitors must enter, ensure that they take the following biosecurity precautions. These measures can significantly reduce the risk that the virus will spread among farms.

Clothing

Clean overalls and/or other clothing (including hairnets) should be provided to all visitors. Require all visitors to wear these over their clothes while in your barn. Clean clothes after each use with normal laundering processes.

Hygiene

Require all visitors to wash their hands before entering your barns.

Footwear

Require all visitors to wear footwear you supply while on your premises.

Vehicles

Have designated parking areas that are away from the poultry barns (at least 30 metres).

Equipment

Ensure all equipment brought onto your premises is clean. To further protect against the spread of avian influenza, spray equipment with disinfectant. Limit equipment that is brought in and ensure decontamination when equipment is brought out.

Security

Ensure your premises are secure. Locked gates should safeguard all entrances to the farm, and locks should be placed on the doors of chicken barns. Vehicles should be parked at least 30 metres away from poultry barns.

*Disinfectant: The Canadian Food Inspection Agency recommends using a solution of equal parts bleach and water.

Additional biosecurity measures to consider are:

- Restrict access to poultry barns.
- Access birds from sources that are known to be of high health standards and never add new birds to an existing flock.
- Restrict access to wild birds. Exclude wild birds from barns or pens using wire or netting.
- Do not allow pet birds in the homes of workers. Workers should avoid visiting other poultry farms.

[illegible]

Workplace cleaning and environmental decontamination[16]

Cleaning and disinfection helps to prevent the transmission of the avian influenza virus from contaminated equipment, such as footwear, tools and cages. Proper cleaning and disinfection procedures are an important component of any biosecurity program.

Most disinfectants will not work properly if there is a presence of organic matter. Therefore, all organic material must be completely removed before applying a proper disinfectant to the items that are being cleaned.

The Canadian Food Inspection Agency recommends a simple, three-step cleaning and disinfection process. The following procedures should be completed outside or in a well-ventilated room, wearing protective eyewear and gloves.

1. Remove all organic material from footwear, tools and other equipment with a brush or sponge, using detergent and clean, hot water.
2. Scrub again, using a solution of 50 millilitres of household bleach (sodium hypochlorite, 5%-6%) and 4 litres of water. Let stand until the surface is dry.
3. Lastly, scrub with hot water and common household disinfectant following the label directions.

16 http://www.inspection.gc.ca/english/anima/heasan/disemala/avflu/bacdoc/clenete.shtml

Personal Protective Equipment (PPE)

The employer must:

- Identify what is required and when it is required based on the hazard assessment.
- Ensure workers are trained in use.
- Ensure workers wear it and/or use it.
- Ensure it is maintained and is in condition to perform the function for which it was designed.
- Ensure PPE meets standards listed in the OHS Code.

Workers must:

- Maintain and use appropriate PPE as required.

OHS Code Part 18

Respiratory Protective Equipment

Where the hazard assessment identifies the need for Respiratory Protective Equipment (RPE), the specific legislated requirements are outlined in Part 18 Sections 244–255 of the OHS Code.

Some of the requirements include:

LEGISLATED REQUIREMENTS

Training

- Employer must ensure all workers receive appropriate education, instruction, or training with respect to the Code so that they are able to comply with its requirement.

Code of Practice

- If respiratory equipment is used at a work site, an employer must prepare a code of practice governing the selection, maintenance and use of the RPE

Approval of Equipment

- Employer must ensure that RPE required at a work site is approved by
  - NIOSH, or
  - another standard setting and equipment testing organization, or combination of organizations, approved by a Director of Occupational Hygiene.

Effective Face Seal

- Employer must ensure that RPE that depends on an effective facial seal for its safe use is correctly fitted and tested in accordance with
  - CSA Standard Z94.4-02, Selection Use and Care of Respirators, or
  - a method approved by a Director of Occupational Hygiene

OHS Act, [illegible] and [illegible] Code, Part 18, Sections 244-255

Use exposure risk guidelines on page 15 to estimate the avian influenza exposure risk in your workplace. Link the exposure risk to the control summary tables on the following pages.

FOCUS

Best Practices - Personal protective equipment and avian influenza

The tables that follow summarize controls aimed at breaking the links of infection based on risk of exposure in job tasks.

Overview of Best Practices for Control of Exposure in Minimal Exposure Job Tasks

Workers with no known contact to avian influenza infected poultry/birds or environments (e.g. workers employed at locations within the Canadian Food Inspection Agency high pathogenic avian influenza "Control Area", but beyond the Canadian Food Inspection Agency "Restricted Zones").

ADMINISTRATIVE CONTROLS	Hand Hygiene	yes, ***critical***
	Respiratory Etiquette	yes
	Training	yes
	Workplace cleaning and environmental decontamination	yes
	Restriction from workplace of workers demonstrating avian influenza symptoms	yes
PERSONAL PROTECTIVE EQUIPMENT (PPE)	Hand Protection	Routine industry precautions.
	Respiratory Protection	Respiratory protection is not recommended unless there is risk of generating significant aerosols* or airborne particulate.
	Eye Protection	Safety glasses or face shield may be recommended while handling birds.
	Protective Clothing	Separate work clothes are recommended.
	Foot Protection	Separate footwear is recommended.

Adapted from Government of Ontario (2006) A Guide to Personal Protective Clothing and Equipment for Workers and Employers Working with or around Poultry or Wild Birds.

* The suspension of tiny particles or droplets in the air, such as dusts, mists, or fumes. These particles may be inhaled or absorbed by the skin, and can sometimes cause adverse heath effects for workers.[17]

17 http://www.cdc.gov/niosh/topics/aerosols/default.html

Overview of Best Practices for Control of Exposure in Lower Exposure Job Tasks

Workers who are at risk of exposure to avian influenza infected poultry/birds or environments (e.g. workers employed within the Canadian Food Inspection Agency "Restricted Zone" and where the high pathogenic avian influenza infection status of the birds is unknown).

ADMINISTRATIVE CONTROLS	Hand Hygiene	yes, ***critical***
	Respiratory Etiquette	yes
	Training	yes
	Workplace cleaning and environmental decontamination	yes
	Restriction from workplace of workers demonstrating avian influenza symptoms	yes
PERSONAL PROTECTIVE EQUIPMENT (PPE)	Hand Protection	Disposable latex/nitrile gloves or reusable heavy duty rubber gloves that can be cleaned and then disinfected
	Respiratory Protection	NIOSH-approved disposable N95 particulate respirator, or better for operations that generate dusts and/or aerosols*.
	Eye Protection	Tight-fitting goggles are recommended to prevent contact between conjunctiva (eye) and potentially infectious airborne particulate
	Protective Clothing	Impervious (e.g. water resistant) coveralls with head coverings and preferably covered zippers and impervious aprons as needed
	Foot Protection	Boot covers or rubber boots (steel-toed) that can be cleaned and then disinfected

[illegible]

[illegible]

RESOURCES

Respiratory Protective Equipment: An Employer's Guide
http://employment.alberta.ca/documents/WHS/WHS-PUB_ppe001.pdf

Guideline for development of a code of practices for respiratory protective equipment
http://employment.alberta.ca/documents/WHS/WHS-PUB_ppe004.pdf

Overview of Best Practices for Control of Exposure in High Exposure Job Tasks		
Workers exposed to avian influenza infected poultry/birds, environments or persons (e.g. workers employed in areas where high pathogenic avian influenza infected birds have been found).		
ADMINISTRATIVE CONTROLS	Hand Hygiene	yes, ***critical***
	Respiratory Etiquette	yes
	Training	yes
	Workplace cleaning and environmental decontamination	yes
	Restriction from workplace of workers demonstrating avian influenza symptoms	yes
PERSONAL PROTECTIVE EQUIPMENT (PPE)	Hand Protection	Disposable latex/nitrile gloves or reusable heavy duty rubber gloves that can be cleaned and then disinfected.
	Respiratory Protection	NIOSH-approved disposable N95 particulate respirators, or better for all high risk activities.
	Eye Protection	Tight-fitting goggles are recommended to prevent contact between conjunctiva (eye) and potentially infectious airborne particulate. If a full face piece powered air-purifying respirator (PAPR) is used it would provide eye protection and eliminate the need to goggles.
	Protective Clothing	Impervious (e.g. water resistant) coveralls with head coverings and preferably covered zippers and impervious aprons as needed. In addition, covered zippers and taping of wrist cuffs is recommended for clean-up activities.
	Foot Protection	Boot covers or rubber boots (steel-toed) that can be cleaned and then disinfected. In addition, taping of ankle cuffs is recommended. Taping of boot covers is recommended to eliminate tripping hazard during clean-up activities.

Adapted from Government of Ontario (2006) A Guide to Personal Protective Clothing and Equipment for Workers and Employers Working with or around Poultry or Wild Birds.

Hazard Assessment and Control Sheet (Sample)

List all identified hazards.
Identify the controls that are in place – engineering, administrative, PPE, or combination – for each hazard.

Job or Task	Potential or Existing Hazard	Hazard Risk Assessment	Controls in Place			Follow-up Action Required	Date and Person Responsible
			Engineering	Administrative	PPE		
Field Cutter	Acute Influenza Cutter – Personnel	Handling of dead birds, then flies, feathers or bedding or the cleaning and disinfection of contaminated surfaces		– hand hygiene – safe work procedures – environmental cleaning – workers training – respiratory etiquette	– disposable latex gloves – coveralls – NIOSH NPP – Full face pass PPE (optional) – overalls and head covering – boot covers or rubber boots	Worker training program needs to be repeated in one month.	Aug 12, 2007 Jane Doe

List potential or existing hazards here.

Identify controls that are in place. If you wish you may identify them by type of control.

Identify if there is any follow-up action required, such as more training or PPE.

Fill in name of person who is responsible for implementing controls.

Step 5: Communicate the information to workers and provide training

Communication

An employer must ensure that workers affected by the hazards identified in a hazard assessment are informed of the hazards and the methods used to control or eliminate the hazards.

The employer must ensure that a worker who may be exposed to a harmful substance at a work site is informed of the health hazards associated with exposure to that substance.

OHS Code Part 2, Section 8 and Part 4, Section 21

LEGISLATED REQUIREMENTS

Communication and consultation are both key to keeping workers healthy. When considering job tasks that are undertaken at your workplace, involve workers in decisions that may affect their health and safety. Generally, the people doing the job are most knowledgeable about the hazards they face and ways to work safely. Further communication and training surrounding an avian influenza outbreak is required.

Clear and open communication channels at all levels in the workplace will encourage support for, and participation in, health and safety activities. Workers will be more likely to follow health and safety procedures when they have been involved in their development.

It is important to be aware of, and to take into consideration, differing skills in language, literacy and culture when communicating health and safety information. Adapt your communication style where necessary.

Training

An employer must ensure that a worker who may be exposed to a harmful substance at a work site:

- Is trained in procedures developed by the employer to minimize the worker's exposure to harmful substances.
- Understands the procedures.

OHS Code Part 4, Section 21

LEGISLATED REQUIREMENTS

Employee Training

All employees with potential occupational exposure should be trained on

- Hazards associated with exposure to the avian influenza virus
- Appropriate control measures, such as respiratory etiquette and hand hygiene to prevent the spread of infection
- The protocols in place at their workplace or facility to isolate and report cases or reduce exposure

LEGISLATIVE REQUIREMENTS

Competent Worker

If work is to be done that may endanger a worker, the employer must ensure that the work is done by:

- A worker who is competent to do the work, or
- a worker who is working under the direct supervision of a worker who is competent to do the work.

"Competent worker" means adequately qualified, suitably trained and with sufficient experience to safely perform work without supervision or with only a minimal degree of supervision.

OHS Regulation, Section 1 and 13

Best practices

Training requirements should be based on the hazard assessment These may include

- Awareness of the avian influenza virus and the potential ways of coming in contact with the virus and control measures to prevent infection,
- hand hygiene,
- respiratory etiquette,
- use and care of PPE, including respiratory protective equipment where required,
- first aid, and
- use of routine practices

In order to stay current with training, keep track of your workers' training in health and safety procedures You may wish to use the form on the following page or create your own system of monitoring and updating training routinely A blank Record of Training from appears in Appendix 3

Record of Training (Sample)

Company Name XYZ Hatchery

Location Edmonton

Type of Training First Aid

Date	Printed Name	Signature
May 10, 2008	Jane Doe	
May 10th 2008	Sam Whyte	

Insert location, city, address, if appropriate.

Enter type of training completed.

Enter date of training, name of worker who has taken the training, and signature of worker.

Completion of this form is not a requirement under OHS legislation and does not indicate competency of workers. It may be used as a record.

Step 6: Evaluate the effectiveness of controls

The effectiveness of controls must be checked routinely. This can be done throughout the day as well as during regular inspections.

Ask the following questions to evaluate the effectiveness of controls:

- Can the hazard be eliminated?
- Have the controls solved the problem?
- Is any risk to workers posed by the controls?
- Are all new hazards being identified?
- Are significant new hazards appropriately controlled?
- Are incident reports being analyzed?
- Are there any other measures required?

Answers to these questions may send you back to an earlier step to repeat the process. Keeping safety procedures up-to-date ensures preparedness when an avian influenza outbreak is announced in Alberta.

Section 6: First Aid

Health and safety programs at the workplace aim to prevent injuries and illnesses. Sometimes, despite the best prevention efforts, injuries and illnesses still occur. In the event of an avian influenza outbreak in Alberta, if a worker becomes ill, report to the employer (and public health surveillance representative) and ensure that medical care is received. Biological hazards need to be included when planning for first aid at a work site.

Planning for first aid in the event of an avian influenza outbreak involves the same factors as those considered at any other time:

- The number of workers at the work site.
- The type of work that is done.
- The hazards to which workers are exposed.

Proximity of medical treatment services to the work site will also decide the services and supplies needed on site.

LEGISLATED REQUIREMENTS

Requirements for the number of first-aiders and the level of first aid training required at all work sites are based on three criteria:

(1) How hazardous the work is.
(2) The time it takes to travel to a health care facility.
(3) The number of workers per shift.

OHS Code, Part 11

RESOURCES

Developing a First Aid Plan
www.hre.gov.ab.ca/documents/WHS/WHS-PUB_fa012.pdf

Useful References

Alberta Agriculture and Rural Development – Avian Influenza
http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/agdex8136

Canadian Food Inspection Agency – Routes of Transmission
http://www.inspection.gc.ca/english/anima/heasan/disemala/avflu/bacdoc/transe.shtml

Canadian Food Inspection Agency – Animal Biosecurity
http://www.inspection.gc.ca/english/anima/biosec/biosece.shtml

Centers for Disease Control and Prevention – Avian Influenza
www.cdc.gov/flu/avian/

Government of Canada – Pandemic influenza
http://www.influenza.gc.ca/ai-ga_e.html

Health Canada – It's Your Health (Avian Influenza – Bird Flu)
http://www.hc-sc.gc.ca/hl-vs/iyh-vsv/diseases-maladies/avian-aviare-eng.php

NIOSH: The National Institute for Occupational Safety and Health (US)
http://www.cdc.gov/niosh/topics/avianflu/

Occupational Safety and Health Administration
"OHSA Guidance Updates on Protection Employees from Avian Flu" (2006)
http://www.osha.gov/Publications/3323-10N-2006-English-07-17-2007.html

Ottawa Ministry of Health and Long Term Care
"Avian Influenza: A guide to personal protective clothing and equipment for workers and employers working with or around poultry or wild birds" (2006)
http://www.health.gov.on.ca/english/public/program/emu/avian/avian_ppe_guide.pdf

Public Health Agency of Canada
http://www.phac-aspc.gc.ca/influenza/avian_qa_e.html

Public Health Agency of Canada – "Human Health Issues related to Avian Influenza in Canada" (2006)
http://www.phac-aspc.gc.ca/publicat/daio-enia/pdf/nat-ai-guide-2006_e.pdf

Public Health Agency of Canada - Current Avian influenza (H5N1) affected areas
http://www.phac-aspc.gc.ca/h5n1/index-eng.php?option=email

US Department of Labor, Occupational Safety and Health Administration
Avian Influenza: Protecting Poultry Workers at Risk: Safety and Health Information Bulletin
http://www.osha.gov/dts/shib/shib121304.html

US Department of Labor, Occupational Safety and Health Administration
Guidance for Protecting Workers against Avian Flu
http://www.osha.gov/dsg/guidance/avian-flu.html

World Health Organization
http://www.who.int/csr/disease/avian_influenza/en/

Appendix 1 – Canadian Food Inspection Agency Control Zones[18]

Disease Control Zones after the Declaration of a Control Area

Infected Zone
The zone or zones established pursuant to the *Health of Animals Regulations* (Section 80), which includes all notifiable avian influenza (NAI) positive premises. The outer boundary of an "Infected Zone" is at least three kilometres from any known infected premises. The delineation of the area may vary depending on physical or geographic boundaries, and according to the progression of the outbreak.

Restricted Zone
The area established immediately surrounding the "Infected Zone" using measures based on the epidemiology of the disease under consideration in order to prevent the spread of the causative animal pathogen. The outer boundary of this zone is at least 10 kilometres from any known infected premises.

Security Zone
The geographic area between the perimeter of the "Restricted Zone" to the edge of the "Control Area". This zone is controlled and referred to as a "Security Zone" to prevent confusion when the rest of the country is referred to as free.

18 http://www.inspection.gc.ca/english/anima/heasan/disemala/avflu/plan/plan-3e.shtml

Appendix 2 - Hazard Assessment

Hazard Assessment and Control Sheet

Company:	Date of Assessment:
Location:	Completed By:

List all identified hazards.
Identify the controls that are in place—engineering, administrative, PPE, or combination—for each hazard.

Job or Task	Potential or Existing Hazard	Hazard Risk Assessment	Controls in Place			Follow-up Action Required	Date and Person Responsible
			Engineering	Administrative	PPE		

Appendix 3 - Blank Record of Training Form

Record of Training

Company Name _____

Location _____

Type of Training _____

Date	Printed Name	Signature

Completion of this form is not a requirement under OHS legislation and does not indicate competency of workers. It may be used as a record.

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